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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|-------------------|
| 10/779,823 | 02/18/2004 | Cheng-Qun Gui | 1857.2610000 | 6816 |
| 26111 | 7590 | 05/18/2005 | | EXAMINER |
| STERNE, KESSLER, GOLDSTEIN & FOX PLLC 1100 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005 | | | | RUTLEDGE, DELLA J |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2851 | |

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|-----------------|--------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/779,823 | GUI ET AL. |
| | Examiner | Art Unit |
| | D. Rutledge | 2851 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on ____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) ____ is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) Claim(s) 17-27 is/are allowed.
- 6) Claim(s) 1-3,5,6,11-14 and 28 is/are rejected.
- 7) Claim(s) 4,7-10,15,16 is/are objected to.
- 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/04.

- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 - 3, 5, 6, 11, 13 and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by **Jain (US Pat. No. 6,870,554)**.

The reference discloses a lithographic apparatus comprising:

An illumination system that supplies a projection beam of radiation **(1-3)**;

A patterning means for imparting the projection beam with a pattern in its cross-section **5-1**;

A second patterning means **5-2**;

A substrate table **10** that supports a substrate **8**;

A projection system **7** that projects the patterned beams onto a target portion of the substrate **8**;

A radiation distribution device that distributes the radiation from the illumination system to the patterning means **5-1, 5-1**;

Wherein the radiation distribution device **4** inherently has a duty cycle during which it sequentially directs substantially all of the radiation from the illumination system **1 - 3** to each of a plurality of radiation distribution channels or routes in turn, and wherein the radiation distribution channels provide the beams of radiation to the patterning means **5-1,5-2**.

Claim 2: the reference has at least three patterning means **5-1, 5-2, 5-3** for each of the channels or routes.

Claim 3: at least one of the channels or routes directs radiation to a single one of the patterning means.

Claim 5: a driver (not shown) rotates the reflector **4** for directing the radiation and distributing the radiation to each of the channels or routes.

Claim 6: the laser **1** is pulsed by pulser **3** (column 3, lines 32-44) and the radiation directed to the reflector **4** in a synchronized manner as claimed.

Claim 11: at least one of the patterning means is an array of individually controllable elements that can impart a pattern to the beam. Each of the patterning means comprise a spatial light modulator **5-1, 5-2, 5-3**.

Claim 13: the projection system comprises a common element for projecting the patterned beams onto the substrate, the lens **7**.

Claim 28: the reference has a device manufacturing method comprising the steps of:
Providing a projection beam of radiation using an illumination system **1-3**;
Using patterning means **5-1, 5-2**;
Projecting the radiation using at least the lens **7** onto a target portion of a substrate **8**;

Using a radiation distribution device, the steering mirror 4, to distribute the radiation from the illumination system to the patterning means 5-1, 5-2. The reference has a duty cycle as claimed and directs the radiation to a plurality of channels or routes onto the substrate 8.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Jain (UA Pat. No. 6,870,554)**.

Jain has the basic apparatus, but does not disclose first and second projection sub-units for independently projecting the patterned beams of radiation onto the target portion of the substrate. One of ordinary skill in the art at the time the invention was made would

have been motivated to modify the apparatus by providing elements or devices to enhance or control the uniformity and routing of the beams such as light pipes or like devices to further control the beams.

Allowable Subject Matter

6. Claims 4, 7 - 10, 15 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
8. Claims 17 - 27 are allowable of the prior art of record.
7. The following is a statement of reasons for the indication of allowable subject matter: Jain (US PAT. No. 6,870,554) do not disclose or suggest at least one radiation distribution channel or route including a beam splitter or beam divider; a plurality of reflectors where each reflector or partial reflective surface in turn passes into the path of the beam of radiation.

Conclusion

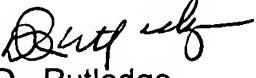
8. Prior art pertinent to the invention:
Mori et al. (US Pat. No. 5,579,147), Yanagihara et al. (US Pat. No. 5,617,181 and Meisburger (US Pub. No. 2004/0075882) disclose lithographic apparatus having means to expose plural target portions of a substrate.

Response Data

Any inquiry concerning this communication or earlier communications from the examiner should be directed to D. Rutledge whose telephone number is (571) 272-2127. The examiner can normally be reached on Mon - Thurs, 6:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


D. Rutledge
Primary Examiner
Art Unit 2851

dr
5/12/2005